



SSR Playback Automation Tool (SPLAT) System Requirements Review

April 17, 2002

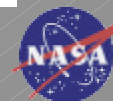
SPLAT Team

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Agenda

- ✍ Project Goals
 - ✍ Description
 - ✍ Background/Need
 - ✍ Benefits
- ✍ Proposed Solution
- ✍ Use Case Diagram (Overview)
- ✍ External Interfaces (Actors)
- ✍ SPLAT Use Cases
- ✍ Interface to MMS
- ✍ Project Schedule





SPLAT Project Goals

✍ Description:

- ✍ Provide the Terra Flight Operations Team (FOT) with a tool that partially automates scheduling Terra SSR buffer dumps for non-standard events and difficult scheduling periods

✍ Background / Need:




- ✍ At least 3 special planning periods occur every month.
 - Shuttle Missions (1 to 12 hrs to plan)
 - MODIS Roll Maneuver (.5 to 6 hrs to plan)
 - Drag Makeup Maneuver (.5 to 6 hrs to plan)
- ✍ Other special planning periods occur more infrequently for
 - Ground Network (GN) Tests (3 – 4 days to plan)
 - Inclination (1 – 2 days to plan)
- ✍ The current MMS procedures can not handle scheduling buffer playbacks for non-standard events
- ✍ The current process of scheduling for these events is manual, time consuming, prone to error, and requires the use of multiple tools/systems
- ✍ Only one member of the FOT has the knowledge to generate SSR buffer dump schedules for such events





SPLAT Project Goals (cont'd)

Benefits:

-  Reduce time and labor spent generating buffer dump schedules for Terra SSR
 - Scheduling for the monthly events could reduced the time required to schedule from a worst case of 24 hours to a matter of minutes leading to a significant time savings each month
-  Automate manual tasks: report retrieval, report parsing and dump schedule generation
-  Allow other members of the FOT to create SSR dump schedules for special events.





Proposed Solution

✍ Develop a tool to:

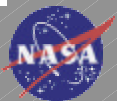
- ✍ Automate report retrieval from MMS
- ✍ Automate extraction of needed events from report files
- ✍ Generate SSR buffer dump schedules on demand
- ✍ Simplify the process of generating SSR buffer dump schedules
 - Any member of the FOT will be able to use the tool
- ✍ Reduce the time needed to generate SSR buffer dump schedules.

✍ Portability

- ✍ Deployable on Windows and Sun Unix workstations

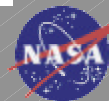
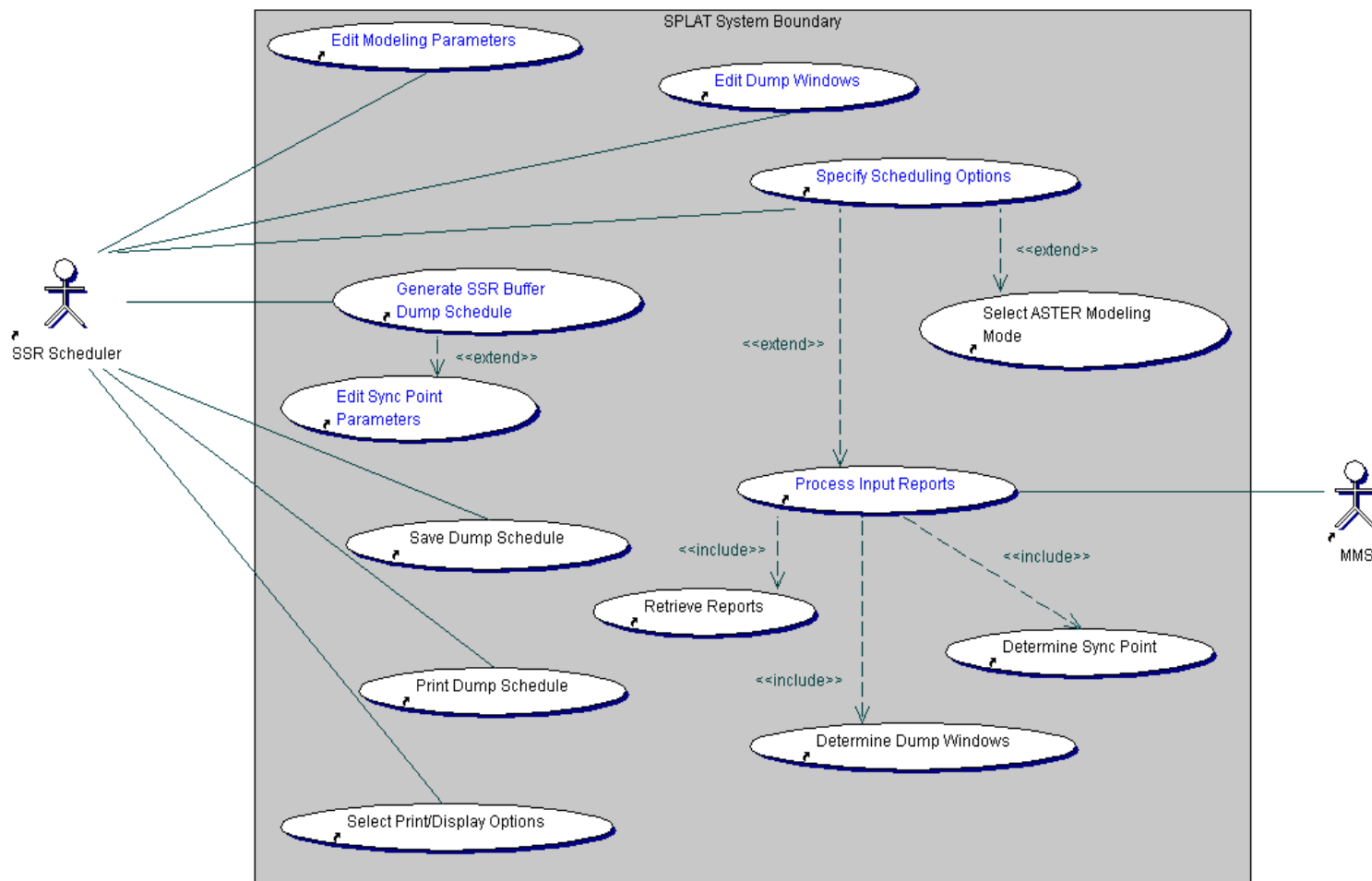
✍ Interface with MMS

- ✍ To retrieve electronic copies of reports





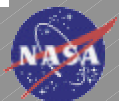
Use Case Diagram





External Interfaces – Actors

Actor	Actor Description
Mission Management Software (MMS)	This actor represents the Mission Management Software (MMS). MMS is an external system that provides the reports needed to schedule SSR Buffer dumps for special events. The following reports are provided by/extracted from the MMS: the TDRS Contact report, AM1 Orbital Events report, SSR Buffer States report, and the ATC Load Report.
SSR Scheduler	The SSR Scheduler is the main actor in the system and controls the operation of the tool. The Spacecraft Engineer reviews, monitors and supports command activity, spacecraft activity log, spacecraft recorder management, and clock maintenance.





SPLAT Use Cases

Use-case Name	Description
Determine Dump Windows	This use describes the process of determining the initial dump windows for each contact in the scheduling window.
Determine Sync Point	This use case describes the steps required for selecting the synchronization point.
Edit Dump Windows	This use case documents the process of editing the dump windows for each contact.
Edit Modeling Parameters	This use case describes the steps performed by the user to create or modify the parameters used in schedule creation.
Generate SSR Buffer Dump Schedule	This use case describes the process the user must follow to create an SSR buffer dump schedule from the extracted report entries.
Print Dump Schedule	This use case describes the steps a user must follow to print an SSR buffer dump schedule.
Process Input Reports	This use case describes the parsing of the input reports. It is kicked off by the user entering a start and stop time for special event.





SPLAT Use Cases (cont'd)

Use-case Name	Description
Retrieve Reports	This use case describes the operations needed to retrieve the input reports needed by the system.
Save Dump Schedule	This use case describes the steps the user must follow to save a generated SSR buffer dump schedule to a text file.
Select ASTER Modeling Mode	This use case describes the steps a user must follow to select the ASTER modeling mode.
Select Print/Display Options	This use case describes the steps performed by the user to select available report fields to display and print in hardcopy reports.
Specify Scheduling Options	This use case describes the steps a user must perform to specify the required data required to extract the necessary events from the input reports and ensure that the correct reports are used.
Edit Sync Point Parameters	This use case describes the steps a user must follow to specify the synchronization point for buffer dump scheduling.





Interface to MMS

- ✍ The tool will require an interface to MMS for retrieving electronic copies of reports
 - ✍ TDRS Contact Report
 - ✍ AM1 Orbital Events
 - ✍ SSR Buffer States Reports
 - ✍ ATC Load Report (depending on ASTER modeling mode)
- ✍ Proposed Solution
 - ✍ Use existing MMS utility programs to extract the reports directly from the MMS database.





Software Development Environment

Recommend:

- Use Sun Ultra-10S purchased for GOC/SPLAT development effort.
- System Specs
 - Solaris 8 OS
 - 440 MHz processor
 - 512 MB RAM (supports up to 1 GB)
 - 20 GB internal disk
 - CD-ROM, Floppy drive
 - 17-inch color monitor
- Desktop PCs to test portability
- Sun Workstation running Solaris 2.6 for testing





Project Milestones

- ✍ System Requirements Document & Review
 - April 2002
- ✍ System Architecture Document
 - May 2002
- ✍ System Design Document & Review
 - June 2002
- ✍ Implementation Complete
 - August 2002
- ✍ Acceptance Testing
 - September 2002

